

February 12, 1952

Dr. P. R. Edwards
Communicable Disease Ctr.
Box 185, Chamblee, Ga.

Dear Dr. Edwards:

Thank you for so promptly returning our manuscript on Salmonella genetic transductions. We are waiting only for a few more electron micrographs of some more highly purified "FA" (activity re prototrophs, several million units per ml) to submit the paper to the Journal of Bacteriology. We are also making amendments in response to your suggestions.

You did catch us on the regularity of occurrence of the flagellar transductions! While you had the paper, we did some more experiments. In about 20 inoculations, about 10 were motile against anti-d. One or two were j-phases; the rest were i;— . Strangely enough, no —1,2,3... transductions have been observed yet, ~~although~~ using FA from either a diphasic or a phase-2-monophasic *S. typhimurium*. The i phase has not, of course, appeared from typhi without FA. The experiment should not be difficult to reproduce; we would be pleased to send you some active material from *typhimurium* if you had any special interest in it.

As to the fermentative changes, we evidently did not make it sufficiently clear what we were doing. Because we did most of this work within *S. typhimurium*, we relied on non-fermenting mutants obtained in the laboratory. The transduced changes are, indeed, back to the normal wild-type condition. As such, they are not in any sense novelties. However, the rate at which such back-mutations¹ occur is a useful test for the genetic properties of the active preparations. In some stocks, back-mutations occurred spontaneously, but this was carefully taken into account in evaluating the "FA" results. The only novelties were in the *stypain* "crosses".

We have been interested in the monotonous occurrence of i;— types, and wonder if we could not now transduce 1,2,3... in a second step. For this we need a new supply of specific sera, Your 1942 pamphlet recommends *S. bonaerensis* phase 1 and *S. newport* v. *puerto-rico*. If we could have these cultures, and the *S. typhimurium* O-form, (#13) we would again be most grateful.

Yours sincerely,

Joshua Lederberg

P.S. A dissecting microscope makes a fairly effective microfilm-reader.